Python GUI Login – Graphical Registration And Login System In Python

Welcome to Python GUI Login tutorial. In this tutorial i will teach you to create a Login form where user can register themselves and can login. Registration and Login requires everywhere, either you are filling any form or want to access any application. So in this tutorial we will see how to implement user registration and login in python.

In this, we will create a GUI interface. Python provides Tkinter toolkit to develop GUI applications. In python, you can develop any GUI applications easily. If you have ideas then you can turn your imagination into reality and make many creative things in programming. So without wasting time let's start our Python GUI Login tutorial. It may be lengthy so guys please keep patience and follow this till the end, and i am pretty sure you will learn much knowledge and also enjoy.

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Python GUI Login Tutorial – Getting Started With Tkinter

Creating New Project

Open your IDE and create a new project and then inside this project create a python file. I prefer **PyCharm** but you can prefer anyone as it doesn't matters, but if you want to know best python IDEs then refer Best Python IDEs.

Importing Tkinter Module

For importing tkinter just write one line of code.

```
1from tkinter import *
```

Designing Main Screen

So first of all you have to design the main screen. This screen have two buttons Login and Register. So let’s see how to implement this.

```
def main_account_screen():

  main_screen = Tk()   # create a GUI window
  main_screen.geometry("300x250") # set the configuration of GUI window
  main_screen.title("Account Login") # set the title of GUI window

# create a Form label
Label(text="Choose Login Or Register", bg="blue", width="300", height="2",
font=("Calibri", 13)).pack()
Label(text="").pack()

# create Login Button
Button(text="Login", height="2", width="30").pack()
Label(text="").pack()

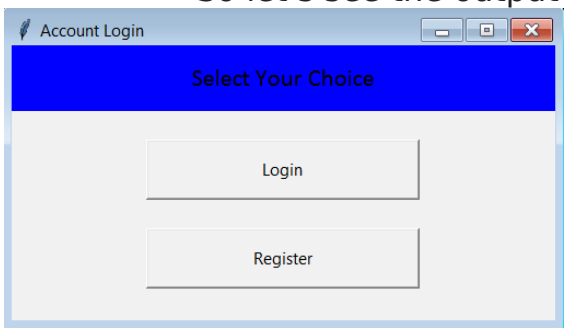
# create a register button
 Button(text="Register", height="2", width="30").pack()

main_screen.mainloop() # start the GUI

main_account_screen() # call the main_account_screen() function
```

```
2
1
```

- You can also customize the design of main screen as per your choice and make it more attractive.
- So let’s see the output of this code.



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Designing New Screen For Registration

Now we will design a new screen for registration. That means if a user press register button on main screen then a new window will appear where users have to enter username and password. And this way they can register themselves. So let’s see how to do that.

```
1  def register():
2   # The Toplevel widget work pretty much like Frame,
3  # but it is displayed in a separate, top-level window.
4  #Such windows usually have title bars, borders, and other “window
5  decorations”.
6  # And in argument we have to pass global screen variable
7
8     register_screen = Toplevel(main_screen)
9     register_screen.title("Register")
1     register_screen.geometry("300x250")
0
1  # Set text variables
1     username = StringVar()
1     password = StringVar()
2
1  # Set label for user's instruction
```

```
    Label(register_screen, text="Please enter details below", bg="blue").pack()
    Label(register_screen, text="").pack()

# Set username label
    username_lable = Label(register_screen, text="Username * ")
    username_lable.pack()

# Set username entry
# The Entry widget is a standard Tkinter widget used to enter or display a
single line of text.

    username_entry = Entry(register_screen, textvariable=username)
    username_entry.pack()

# Set password label
    password_lable = Label(register_screen, text="Password * ")
    password_lable.pack()

# Set password entry
    password_entry = Entry(register_screen, textvariable=password, show='*')
    password_entry.pack()

    Label(register_screen, text="").pack()

# Set register button
 Button(register_screen, text="Register", width=10, height=1,
bg="blue").pack()
```

```
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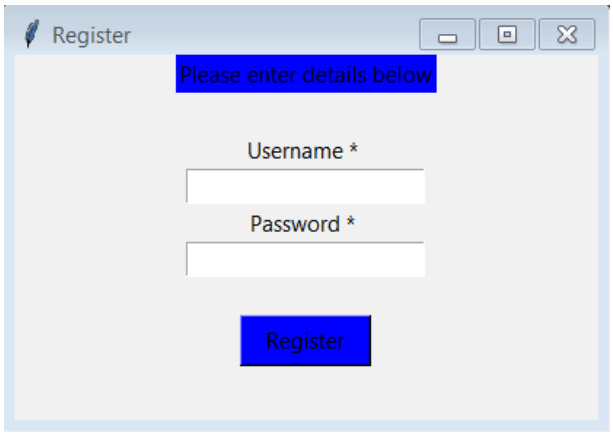
0
```

And now we have to add two things inside the main_account_screen() method.

```
global main_screen
# add command=register in button widget
Button(text="Register", height="2", width="30", command=register).pack()
```

So now we can see the registration window



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So, as user clicks register button on main window(first) then a new screen will be appear where user have to enter their entry.

Assigning Functions To Register Button

Now we have to implement event on register button. It means, after filling the entries, as soon as the register button is pressed, entries are saved in a file. So let’s see how to do it.

```
def register_user():

# get username and password
    username_info = username.get()
    password_info = password.get()

# Open file in write mode
    file = open(username_info, "w")

# write username and password information into file
    file.write(username_info + "\n")
    file.write(password_info)
```

```
    file.close()

    username_entry.delete(0, END)
    password_entry.delete(0, END)

# set a label for showing success information on screen

Label(register_screen, text="Registration Success", fg="green",
font=("calibri", 11)).pack()
```

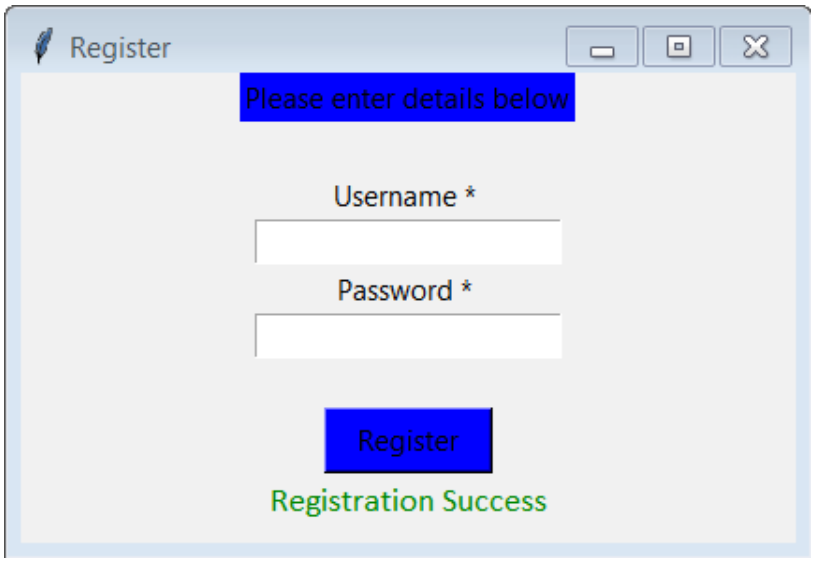
And now we have to declare username, password, username_entry, password_entry as global so add following codes inside **register()** function

```
# set global variables
global username
global password
global username_entry
global password_entry
```

And add one more thing inside **register()** function

```
# add command = register
Button(register_screen, text="Register", width=10, height=1, bg="blue",
command = register_user).
```

And now we will finally test our registration process. So fill the username and password field in register form and press register button. You will find, a **Registration Success** message on screen. So let's see the output.



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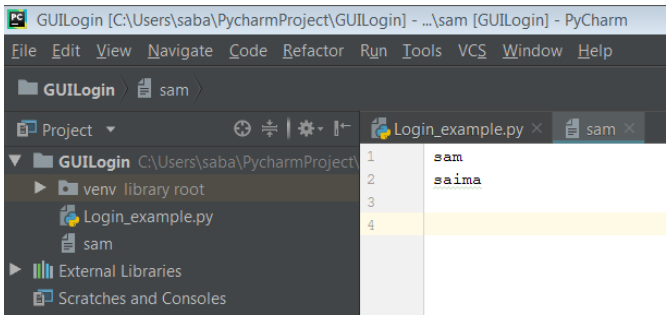
And after registration a text file has been created which contain user's informations such as username and password. So the file like –



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So, you can see username and password have been saved successfully in this file.

Finally, we have completed register process and now it's time to move towards login process. So, let's start.

Designing New Screen For Login

We have seen register process, now we must implement login process. So, for this, first we must design a login window. It is same as register window but having little changes. So, the code for login is:

```
# define login function
def login():
    login_screen = Toplevel(main_screen)
    login_screen.title("Login")
    login_screen.geometry("300x250")
    Label(login_screen, text="Please enter details below to login").pack()
    Label(login_screen, text="").pack()

    global username_verify
    global password_verify

    username_verify = StringVar()
    password_verify = StringVar()
    Label(login_screen, text="Username * ").pack()
    username_login_entry = Entry(login_screen, textvariable=username_verify)
    username_login_entry.pack()
    Label(login_screen, text="").pack()
    Label(login_screen, text="Password * ").pack()
    password__login_entry = Entry(login_screen, textvariable=password_verify, show= '*')
    password__login_entry.pack()
    Label(login_screen, text="").pack()
    Button(login_screen, text="Login", width=10, height=1, command=login_verification).pack()
```

```
1
2
2
2
3
```

The above code is same as we have done in register so here i am not explaining it.

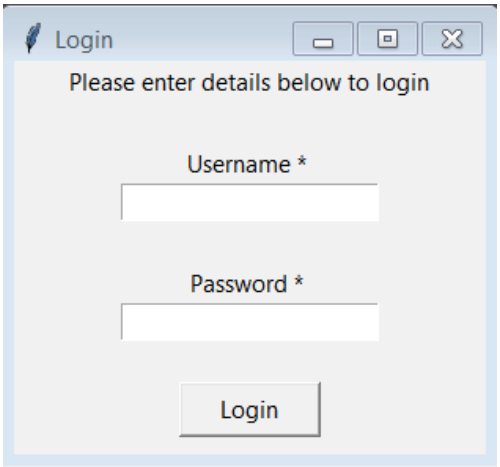
And now add a line inside main_account_screen()

```
1 # add command = login
2 Button(text="Login", height="2", width="30", command = login).pack()
```

And now define login verification function.

```
1 def login_verification():
2    print("working...")
```

And now our login screen look like –



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Login Verification Process

In this section we will verify the username and password for login. So, let’s start

Defining Verification function

```
def login_verify():
#get username and password
    username1 = username_verify.get()
    password1 = password_verify.get()
# this will delete the entry after login button is pressed
    username_login_entry.delete(0, END)
    password_login_entry.delete(0, END)
 #The method listdir() returns a list containing the names of the entries in the
directory given by path.
    list_of_files = os.listdir()
 #defining verification's conditions
    if username1 in list_of_files:
        file1 = open(username1, "r")   # open the file in read mode
 #read the file,
#as splitlines() actually splits on the newline character,
#the newline character is not left hanging at the end of each line. if password1
in verify:

        verify = file1.read().splitlines()
            login_sucess()

        else:
            password_not_recognised()

    else:
        user_not_found()

```

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9
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2
3
2
4
2
5
```

Designing Login Success Popup

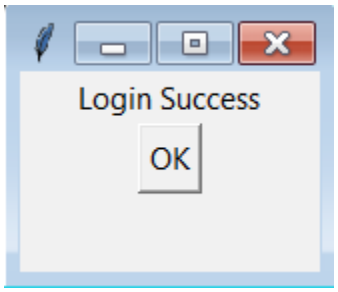
Now we will define a function that will show a popup for successful login. If user has entered the valid entries, then this popup will appear. So, let’s see how to do it.

```
1 def login_success():
2
3    global login_success_screen   # make login_success_screen global
4    login_success_screen = Toplevel(login_screen)
5    login_success_screen.title("Success")
6    login_success_screen.geometry("150x100")
7    Label(login_success_screen, text="Login Success").pack()
8
9 # create OK button
1    Button(login_success_screen, text="OK",
0 command=delete_login_success).pack()
```

And now define a function for deleting the popup. So, write the code.

```
def delete_login_success():
   login_success_screen.destroy()
```

So now let’s see the output. If the user enters the valid username and password, then the popup will appear as below.



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Designing Invalid Password Popup

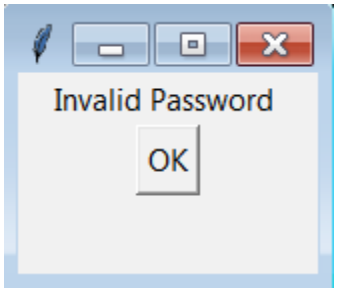
If user enter wrong password, then a popup for invalid password will appear. So, to do this we will define the following method.

```
def password_not_recognised():
   global password_not_recog_screen
   password_not_recog_screen = Toplevel(login_screen)
   password_not_recog_screen.title("Success")
   password_not_recog_screen.geometry("150x100")
   Label(password_not_recog_screen, text="Invalid Password ").pack()
   Button(password_not_recog_screen, text="OK",
command=delete_password_not_recognised).pack()
```

And now define a function for deleting this popup. So write the code.

```
def delete_password_not_recognised():
    password_not_recog_screen.destroy()
```

So see the result,



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You can destroy this by pressing **OK** button.

Designing User Not Found Popup

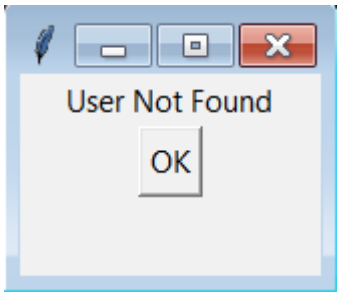
If user enter wrong username, then a popup for User **Not Found** will appear. So, to do this we will define the following method.

```
def user_not_found():
    global user_not_found_screen
    user_not_found_screen = Toplevel(login_screen)
    user_not_found_screen.title("Success")
    user_not_found_screen.geometry("150x100")
    Label(user_not_found_screen, text="User Not Found").pack()
    Button(user_not_found_screen, text="OK",
command=delete_user_not_found_screen).pack()
```

And now define a function for deleting this popup. So write the code.

```
def delete_user_not_found_screen():
    user_not_found_screen.destroy()
```

So now we will see the output of above code.



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Complete Code For Python GUI Login

```
#import modules
from tkinter import *
import os
# Designing window for registration
def register():
    global register_screen
    register_screen = Toplevel(main_screen)
    register_screen.title("Register")
    register_screen.geometry("300x250")
    global username
    global password
    global username_entry
    global password_entry
    username = StringVar()
```

```
    password = StringVar()
    Label(register_screen, text="Please enter details below", bg="blue").pack()
    Label(register_screen, text="").pack()
    username_lable = Label(register_screen, text="Username * ")
    username_lable.pack()
    username_entry = Entry(register_screen, textvariable=username)
    username_entry.pack()
    password_lable = Label(register_screen, text="Password * ")
    password_lable.pack()
    password_entry = Entry(register_screen, textvariable=password, show='*')
    password_entry.pack()
    Label(register_screen, text="").pack()
    Button(register_screen, text="Register", width=10, height=1, bg="blue",
command = register_user).pack()
# Designing window for login
def login():
    global login_screen
    login_screen = Toplevel(main_screen)
    login_screen.title("Login")
    login_screen.geometry("300x250")
    Label(login_screen, text="Please enter details below to login").pack()
    Label(login_screen, text="").pack()
    global username_verify
    global password_verify
    username_verify = StringVar()
    password_verify = StringVar()
    global username_login_entry
    global password_login_entry
    Label(login_screen, text="Username * ").pack()
    username_login_entry = Entry(login_screen, textvariable=username_verify)
    username_login_entry.pack()
    Label(login_screen, text="").pack()
    Label(login_screen, text="Password * ").pack()
    password_login_entry = Entry(login_screen, textvariable=password_verify,
show= '*')
    password_login_entry.pack()
    Label(login_screen, text="").pack()
```

```
    Button(login_screen, text="Login", width=10, height=1, command =
login_verify).pack()
# Implementing event on register button
def register_user():
    username_info = username.get()
    password_info = password.get()
    file = open(username_info, "w")
    file.write(username_info + "\n")
    file.write(password_info)
    file.close()
    username_entry.delete(0, END)
    password_entry.delete(0, END)
    Label(register_screen, text="Registration Success", fg="green",
font=("calibri", 11)).pack()
# Implementing event on login button
def login_verify():
    username1 = username_verify.get()
    password1 = password_verify.get()
    username_login_entry.delete(0, END)
    password_login_entry.delete(0, END)
    list_of_files = os.listdir()
    if username1 in list_of_files:
        file1 = open(username1, "r")
        verify = file1.read().splitlines()
        if password1 in verify:
            login_sucess()

        else:
            password_not_recognised()
    else:
        user_not_found()
# Designing popup for login success
def login_sucess():
    global login_success_screen
    login_success_screen = Toplevel(login_screen)
    login_success_screen.title("Success")
    login_success_screen.geometry("150x100")
```

```
    Label(login_success_screen, text="Login Success").pack()
    Button(login_success_screen, text="OK",
command=delete_login_success).pack()
 # Designing popup for login invalid password
 def password_not_recognised():
    global password_not_recog_screen
    password_not_recog_screen = Toplevel(login_screen)
    password_not_recog_screen.title("Success")
    password_not_recog_screen.geometry("150x100")
    Label(password_not_recog_screen, text="Invalid Password ").pack()
    Button(password_not_recog_screen, text="OK",
command=delete_password_not_recognised).pack()
 # Designing popup for user not found
def user_not_found():
    global user_not_found_screen
    user_not_found_screen = Toplevel(login_screen)
    user_not_found_screen.title("Success")
    user_not_found_screen.geometry("150x100")
    Label(user_not_found_screen, text="User Not Found").pack()
    Button(user_not_found_screen, text="OK",
command=delete_user_not_found_screen).pack()
 # Deleting popups
 def delete_login_success():
    login_success_screen.destroy()
def delete_password_not_recognised():
    password_not_recog_screen.destroy()
 def delete_user_not_found_screen():
    user_not_found_screen.destroy()
 # Designing Main(first) window

def main_account_screen():
    global main_screen
    main_screen = Tk()
    main_screen.geometry("300x250")
    main_screen.title("Account Login")
    Label(text="Select Your Choice", bg="blue", width="300", height="2",
font=("Calibri", 13)).pack()
```

```
    Label(text="").pack()
    Button(text="Login", height="2", width="30", command = login).pack()
    Label(text="").pack()
    Button(text="Register", height="2", width="30", command=register).pack()

    main_screen.mainloop()


main_account_screen()
```

You can customize the look of windows as per your choice.

So, this was Python GUI Login tutorial. I hope you have understood this very well. If you found it helpful, then please share with others. And if you are getting any difficulty while doing this then comment your queries. Thanks